October 30, 2003

Wendell Owen, Resident Agent
Co-Op Mining Company
P.O. Box 1245
Huntington, Utah 84528

Re: Conditional Approval of Revision to #4 Mine Blast Plan, Co-Op Mining Company, Bear Canyon Mine, C/015/0025, Task ID#1753, Outgoing File

Dear Mr. Owen:

The above-referenced amendment is approved conditioned upon receipt of seven clean copies for incorporation into the MRP. Once we receive these copies, we will send a stamped incorporated copy to you for insertion into your copy of the Mining and Reclamation Plan. This letter authorizes you to proceed with your blasting plans as well. A copy of our Technical Analysis is enclosed for your information.

If you have any questions, please feel free to call me at (801) 538-5325 or Pete Hess at (435) 613-5622.

Sincerely,

/S/

Daron R. Haddock
Permit Supervisor

PHH/sd
cc: Price Field Office
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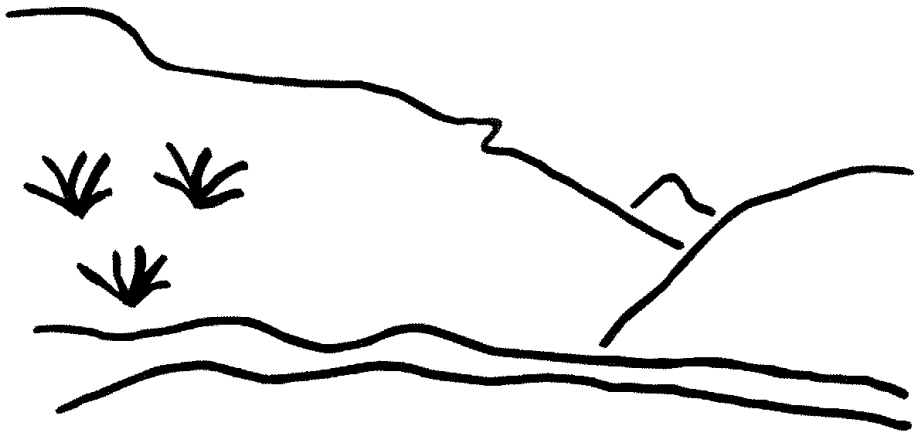
State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Bear Canyon Mine
Blasting Plan #4 Mine Portal Development
C/015/025
Task ID #1753
Technical Analysis
October 20, 2003

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TECHNICAL ANALYSIS

The Division regulates the Surface Mining Control and Reclamation Act of 1977 (SMCRA). When mines submit a Permit Application Package or an amendment to their Mining and Reclamation Plan, the Division reviews the proposal for conformance to the R645-Coal Mining Rules. This Technical Analysis is such a review. Regardless of these analyses, the permittee must comply with the minimum regulatory requirements as established by SMCRA.

Readers of this document must be aware that the regulatory requirements are included by reference. A complete and current copy of these regulations and a copy of the Technical Analysis and Findings Review Guide can be found at http://ogm.utah.gov/coal

This Technical Analysis (TA) is written as part of the permit review process. It documents the Findings that the Division has made to date regarding the application for a permit and is the basis for permitting decisions with regard to the application. The TA is broken down into logical section headings which comprise the necessary components of an application. Each section is analyzed and specific findings are then provided which indicate whether or not the application is in compliance with the requirements.

Often the first technical review of an application finds that the application contains some deficiencies. The deficiencies are discussed in the body of the TA and are identified by a regulatory reference which describes the minimum requirements. In this Technical Analysis we have summarized the deficiencies at the beginning of the document to aid in responding to them. Once all of the deficiencies have been adequately addressed, the TA will be considered final for the permitting action.

It may be that not every topic or regulatory requirement is discussed in this version of the TA. Generally only those sections are analyzed that pertain to a particular permitting action. TA's may have been completed previously and the revised information has not altered the original findings. Those sections that are not discussed in this document are generally considered to be in compliance.

INTRODUCTION

The permittee submitted an amendment to the blasting section of the approved mining and reclamation plan on October 16, 2003. The amendment is necessary, as the currently approved plan does not contain a blast design for tunnel development. To access the coal reserves associated with the #4 Mine (Tank seam, Wild Horse Ridge addition) the permittee must develop two rock tunnels through three hundred feet of coal burn. The portal pad has been constructed and the permittee is waiting on Division approval to initiate development of the tunnels via blasting.

INTRODUCTION

OPERATION PLAN

USE OF EXPLOSIVES

Regulatory Reference: 30 CFR Sec. 817.61, 817.62, 817.64, 817.66, 817.67, 817.68; R645-301-524.

Analysis:

General Requirements

The permittee has determined that in order to access the reserves of the Tank seam in the Wild Horse Ridge area (designated as the #4 Mine), two tunnels must be developed through at least three hundred feet of coal burn. The #4 Mine portal pad has been developed; the highwall area consists of a massive sandstone member overlain by unconsolidated sandstone materials. Explosives are necessary to drive tunnels through this type of material.

R645-301-524; the first two rounds (twenty feet of depth) in each tunnel are initial rounds, and are thus under the jurisdiction of the Division via R645-301-524, which are the requirements which address surface blasting in the State of Utah.

R645-301-524.110; the surface blasting operations will be conducted by Mr. Kevin Petersen, who is a certified *Coal Mine Surface Blaster in the State of Utah* (Certificate #196; certification remains in affect until January 31, 2005). A copy of Mr. Petersen's certificate has been included as part of the submittal.

R645-301-524.230; the submitted blast design actually includes three blast hole patterns, to allow the certified blaster some versatility in controlling material size. All holes will be drilled to a maximum depth of ten feet. Thus, two rounds must be shot in each tunnel before the surface blasting requirements are no longer applicable.

The submitted blast design indicates the type and amount of explosive to be used per charged hole; each ten foot hole will contain eight 12-inch lengths of Irecogel permissible explosive, thus allowing for two feet of stemming per hole, (30 CFR 75.1322 (d). Each 1.25-inch by 12 inch cartridge weighs 0.78 pounds. Thus, each charged hole will contain 6.24 pounds of explosive. Each of the three blast designs contains 45 holes or less. Thus, the maximum amount of explosive to be used per round equates to 6.24 (45) = 281 pounds of explosive. Assuming an entry width of eighteen feet and an entry height of eight feet and a depth of ten feet (maximum depth of charged hole) the determined powder factor for the round would be 5.27 (281pounds explosive / 53.33 cubic yards rock broken per round). Detonation of the round will

be achieved by using Coaldet, Millidet or equivalent electric millisecond delay detonators, (see page 3M-8 of the submittal). Holes will be sequenced as shown in Figures 1,2, or 3 depending on the pattern selected.

R645-301-524.240; the blast design has been prepared, signed, and dated by Mr. Kevin Petersen. The submitted design(s) contains diagrams of the drill pattern(s), and delay patterns to be used to develop the tunnels and trim the roof, floor and ribs of each, (See Figures 1,2, and 3). The pattern selected will be at the discretion of the certified surface blaster in charge.

Preblasting Survey

R645-301-524.300, -524.310, there are three structures associated with the blasting area. One dwelling is located just outside of the Bear Canyon permit boundary near the end of the Emery County road. Same is owned by Mr. Ken Defa, Superintendent for the Co-Op Mining operation. A second residence is occupied by Mr. Wendell Owen, General Manager of the Co-Op Mining operation. That dwelling is the same structure as the scale house, and is located within the disturbed area/permit area.

The last structure is the hunting lodge owned by Sportsmen's, Inc. This structure is located approximately 200 feet WSW of the blasting area. The lodge is located perpendicular from the direction of flight any flyrock that is generated would take.

The owner's of the dwellings have been notified in writing of the permittee's intent to use explosives to develop the tunnels. The letters have been submitted as part of the submittal. A pre-blast survey of the associated structures has been conducted, and has been submitted as part of amendment. It is also on file at the mine site.

General Performance Standards

R645-301-524.430; The operator has notified, in writing, all residents located within ½ mile of the blasting site of their intent to use explosives to develop the #4 Mine access.

A public notification of the proposed blasting schedule will be published in a local newspaper of general circulation on Tuesday, October 21, 2003. This will be at least 24 hours in advance of when blasting for the tunnels will occur. The permittee has indicated in the public notice that they anticipate the initiation of blasting on October 23, 2003. Page 3M-8, **Blasting Schedule**, indicates that should construction activities require a revision to the blasting schedule, local governments, residents and the local newspaper will be notified. **The permittee will not initiate surface blasting until Division approval of this amendment is received.**

R645-301-524.400; the application describes the proposed schedule of blasting, i.e., **"blasting will generally take place Monday through Friday, but may include Saturday and Sunday if needed. Blasting will occur between sunrise and sunset"**, (**R645-301-524.420**, See page 3M-8).

Blasting Signs, Warnings, And Access Control

Page 3M-4 of the application describes the posting of warning signs under section **3.4.5.1 Signs and Markers,** page 3-30 of the approved mining and reclamation plan. **"When surface blasting is performed, "Blasting Area" signs will be posted on access roads and on public roads within 200 feet. In addition, the blasting area will be conspicuously flagged in the vicinity of the charged holes."** Also, **"during periods of construction using surface blasting the entrance to the property from the public road will be posted with a sign stating, "Warning ! Explosives in Use" and explaining the blast warning and all-clear signals and the marking of blast areas."**

In addition, page 3M-4 indicates that warning and all-clear signals of the different patterns, audible within a range of one-half mile from the point of the blast, will be given to inform anyone in the area of the status of blasting activities. The signals and their patterns and meanings will be described in the "Warning" sign at the entrance to the property. Each person within the permit area, or anyone who resides or regularly works within one-half mile of the permit area will be notified of the meaning of the signals.

The only means of vehicular access to the blasting area is provided by the Bear Canyon road providing ingress to the #3 and #4 Mines. The aforementioned warning signs and signals are adequate to prevent unauthorized access to the area during blasting activities.

Control of Adverse Effects

As previously mentioned, the powder factor for the blast designs submitted has been calculated to be 5.27 (281pounds explosive / 53.33 cubic yards rock broken per round). This is considered to be "light" charge relative to the powder factor recommended in the Society of Mining Engineers Mining Reference Handbook, Chapter 11, page 211, Figure 11.3, for developing a heading having an approximate area of 100 square feet in sandstone material, as is being developed for the #4 Mine. That publication recommends a powder factor of approximately 7.2. Therefore, based on the analysis of the submitted blast design, the likelihood of adverse affects developing from flyrock, air blast, or ground vibration is of little or no concern. The low powder factor has been discussed with Mr. Charles Reynolds, Engineering

Manager for the permittee. This low factor could create an inadequate "pull" for the round, create too large a material from a handling perspective, or cause other difficulties. If a round having a higher powder factor is implemented, better pull and breakage of the material is likely. The permittee is starting at the low side of the powder factor/adverse effects scale, and will more than likely increase the powder factor constant until a reasonable amount of pull, breakage and other benefits from explosive usage will become apparent. Adverse effects are created by the overloading of a blast design.

Records of Blasting Operations

R645-301-524.700; the permittee is familiar with the requirements of this regulation and has maintained all previous blasting records generated at the site for at least the last three years.

Findings:

The application meets the minimum regulatory requirements and should be approved.